

Observations during the period that the dark sides of the rings are exposed to the Earth answer the question as to whether the rings are composed of solid particles or of vaporous matter. If the latter, the edges at least of the rings would be seen.

Johannesburg:  
1907 October 5.

*Observations of the Satellite of Neptune, from photographs taken at the Royal Observatory, Greenwich, between 1906 December 27 and 1907 April 24.*

(Communicated by the Astronomer Royal.)

The following measures of position-angle and distance of Neptune's satellite were made from photographs taken with the 26-in. refractor of the Thompson equatorial. The occulting shutter was used as in previous years. The photographs were taken by Messrs. Davidson, Edney, or Melotte, and were measured in a position micrometer in direct and reversed position by Messrs. Davidson and Melotte. The tabular positions with which comparison is made were computed from the data given in the *Connaissance des Temps*, based on Dr. Hermann Struve's elements, the eccentricity of the orbit being neglected.

A discussion of these residuals gives the following differences from Dr. Hermann Struve's elements in the sense Tabular - Observed:

$$du = -1^{\circ}03 \quad dN = -0^{\circ}98 \quad dI = -0^{\circ}18 \quad da = -''008$$

giving for the epoch 1907.2

$$a = 16''.279 \quad N = 188^{\circ}68 \quad I = 116^{\circ}69.$$

### *Neptune and Satellite.*

*Position-angle and Distance, from photographs taken with the 26-in. Refractor.*

Date and G.M.T.				Position-angle.			Distance.		
				Obs.	Tab.	T-O.	Obs.	Tab.	T-O.
1906.	d	h	m s						
Dec. 27	10	57	45	305°13	305°07	-0°06	14''53	14''72	+0''19
1907.									
Jan. 17	10	14	43	105°43	106°11	+0°68	16°44	16°47	+0°03
	17	10	42 11	104°02	105°30	+1°28	16°54	16°52	-0°02
	17	11	7 30	102°39	104°57	+2°18	16°75	16°57	-0°18
	30	10	30 31	44°20	45°99	+1°79	12°69	12°80	+0°11
	30	10	56 6	43°18	44°76	+1°58	12°60	12°70	+0°10
	30	11	22 51 (a)	43°40	43°43	+0°03	12°84	12°59	-0°25

## Position-angle and Distance—continued.

Date and G.M.T.				Position-angle.			Distance.		
				Obs.	Tab.	T - O.	Obs.	Tab.	T - O.
1907.	d	h	m s						
Feb.	1	12	46 8	269°00	269°10	+0°10	16"82	16"73	-0"09
	7	10	34 23 (b)	266°96	267°77	+0°81	16°53	16°65	+0°12
	21	11	2 29	115°59	117°16	+1°57	15°71	15°30	-0°41
	28	8	23 33	70°27	72°94	+2°67	15°39	15°42	+0°03
	28	8	54 19	71°73	71°93	+0°20	15°53	15°32	-0°21
	28	9	29 47 (c)	69°48	70°75	+1°27	14°96	15°20	+0°24
Mar.	1	9	40 41	356°64	357°01	+0°37	10°92	10°99	+0°07
	1	10	3 48	354°77	355°52	+0°75	10°73	11°01	+0°28
	1	10	25 37	352°86	354°13	+1°27	10°98	11°04	+0°06
	1	10	44 18	352°63	352°94	+0°31	11°10	11°06	-0°04
	23	9	6 19 (b)	93°73	93°30	-0°43	16°09	16°43	+0°34
	23	9	36 54 (a)	91°43	92°44	+1°01	16°68	16°42	-0°26
	23	10	6 38 (a)	90°23	91°61	+1°38	16°40	16°42	+0°02
	25	9	26 39 (d)	316°61	318°15	+1°54	12°88	12°79	-0°09
	27	9	1 44	218°08	218°66	+0°58	12°01	11°97	-0°04
	27	9	25 8	216°54	217°43	+0°89	12°10	11°89	-0°21
	27	9	56 16	214°39	215°76	+1°37	11°81	11°95	+0°14
	27	10	23 35 (e)	214°27	214°26	-0°01	11°74	11°69	-0°05
	28	8	58 37	133°22	135°42	+2°20	13°11	13°02	-0°09
	28	9	33 48 (f)	134°36	133°88	-0°48	13°01	13°16	+0°15
Apr.	6	9	50 47	301°44	302°67	+1°23	14°24	14°25	+0°01
	24	9	32 40	283°83	286°05	+2°22	15°51	15°69	+0°18

(a) Satellite faint and diffused.

(b) Satellite very faint and diffused.

(c) Photographic speck on Satellite.

(d) Very faint.

(e) Satellite diffused.

(f) Very diffused. On fringe of secondary spectrum.

Royal Observatory, Greenwich:  
1907 November 7.

*Observations of Minor Planets, from photographs taken with the 30-in. Reflector of the Thompson Equatorial at the Royal Observatory, Greenwich, during the year 1906.*

*(Communicated by the Astronomer Royal.)*

The following positions of minor planets were obtained from photographs taken with the 30-in. reflector during the year 1906.

The plates were measured with the astrographic micrometer. Six reference stars were, as a rule, measured with the planet, their positions being derived when possible from the Catalogues of the Astronomische Gesellschaft, or from the Radcliffe Catalogue, 1890.

The positions given are not corrected for Parallax.

Log Parallax Correction = log Parallax Factor — log  $\Delta$ .

Date and G.M.T. 1906. d h m s				Apparent R.A. h m s			Apparent Dec. ° ' "			Log Parallax Factor. R.A. Dec.	
(324) Bamberga.											
Apr.	14	11	1 14	12	39	36.97	- 17	13	48.1	- 8.223	+ 0.912
	19	11	39 24	12	35	28.10	16	51	3.6	+ 8.943	0.909
	25	10	33 53	12	30	54.16	16	22	50.6	+ 8.397	0.910
	26	10	33 3	12	30	10.98	16	18	4.7	+ 8.500	0.909
(278) Paulina.											
Apr.	25	10	13 58	13	29	30.55	- 1	0	7.1	- 9.004	+ 0.842
	26	11	24 48	13	28	39.43	0	59	32.3	+ 8.283	0.842
	27	10	30 35	13	27	51.53	0	59	8.2	- 8.770	0.842
(191) Kolga.											
Apr.	28	11	0 8	14	21	35.91	+ 0	27	10.1	- 8.955	+ 0.833
(146) Lucina.											
Apr.	28	11	42 9	14	22	38.29	+ 3	16	50.5	- 8.408	+ 0.815
(443) Photographica.											
May	24	10	31 24	14	29	8.52	- 8	17	18.3	+ 8.162	+ 0.879
	31	10	9 23	14	24	55.15	7	58	8.0	+ 8.463	0.878
(65) Cybele.											
May	24	11	16 15	14	45	18.23	- 11	0	58.8	+ 8.778	+ 0.890
	31	10	37 31	14	41	19.64	10	45	10.0	+ 8.687	0.889
(148) Gallia.											
May	24	11	51 35	15	2	27.91	+ 18	46	52.8	+ 8.971	+ 0.679